

§ 56.90–5 Bolting procedure.

(a) All flanged joints shall be fitted up so that the gasket contact faces bear uniformly on the gasket and then shall be made up with relatively uniform bolt stress. Bolt loading and gasket compression need only be verified by touch and visual observation.

(b) (Reproduces 135.2.2.) In bolting gasketed flanged joints, the gasket shall be properly compressed in accordance with the design principles applicable to the type of gasket used.

(c) Steel to cast iron flanged joints shall be assembled with care to prevent damage to the cast iron flange in accordance with § 56.25–10.

(d) (Reproduces 135.2.4.) All bolts shall be engaged so that there is visible evidence of complete threading through the nut or threaded attachment.

§ 56.90–10 Threaded piping (reproduces 135.4).

(a) Any compound or lubricant used in threaded joints shall be suitable for the service conditions and shall not react unfavorably with either the service fluid or the piping materials.

(b) Threaded joints which are to be seal welded shall be made up without any thread compound.

(c) Backing off to permit alignment of pipe threaded joints shall not be permitted.

Subpart 56.95—Inspection**§ 56.95–1 General (replaces 136).**

(a) The provisions in this subpart shall apply to inspection in lieu of 136 of ANSI-B31.1.

(b) Prior to initial operation, a piping installation shall be inspected to the extent necessary to assure compliance with the engineering design, and with the material, fabrication, assembly and test requirements of ANSI-B31.1, as modified by this subchapter. This inspection is the responsibility of the owner and may be performed by employees of the owner or of an engineering organization employed by the

owner, together with the marine inspector.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9979, June 17, 1970]

§ 56.95–5 Rights of access of marine inspectors.

Marine inspectors shall have rights of access to any place where work concerned with the piping is being performed. This includes manufacture, fabrication, assembly, erection, and testing of the piping or system components. Marine inspectors shall have access to review all certifications or records pertaining to the inspection requirements of § 56.95–1, including certified qualifications for welders, welding operators, and welding procedures.

§ 56.95–10 Type and extent of examination required.

(a) *General.* The types and extent of nondestructive examinations required for piping must be in accordance with this section and Table 136.4 of ANSI-B31.1. In addition, a visual examination shall be made.

(1) 100 percent radiography¹ is required for all Class I, I-L, and II-L piping with wall thickness equal to or greater than 10 mm (.375 in.).

(2) Nondestructive examination is required for all Class II piping equal to or greater than 18 inches nominal diameter regardless of wall thickness. Any test method acceptable to the Officer in Charge, Marine Inspection may be used.

(3) Appropriate nondestructive examinations of other piping systems are required only when deemed necessary by the Officer in Charge, Marine Inspection. In such cases a method of testing satisfactory to the Officer in Charge, Marine Inspection must be selected from those described in this section.

(b) *Visual examination.* Visual examination consists of observation by the marine inspector of whatever portions of a component or weld are exposed to such observation, either before, during, or after manufacture, fabrication, assembly or test. All welds, pipe and piping components shall be capable of complying with the limitations on imperfections specified in the product

specification under which the pipe or component was purchased, or with the limitations on imperfections specified in § 56.70-15(b) (7) and (8), and (c), as applicable.

(c) *Nondestructive types of examinations*—(1) *100 Percent radiography*. Where 100 percent radiography¹ is required for welds in piping, each weld in the piping shall be completely radiographed. If a butt weld is examined by radiography, for either random or 100 percent radiography, the method used shall be as follows:

(i) X-ray or gamma ray method of radiography may be used. The selection of the method shall be dependent upon its adaptability to the work being radiographed. The procedure to be followed shall be as indicated in PW-51 of section I of the ASME Code.

(ii) If a piping component or a weld other than a butt weld is radiographed, the method used shall be in accordance with UW-51 of section VIII of the ASME Code.

(2) *Random radiography*. Where random radiography¹ is required, one or more welds may be completely or partially radiographed. Random radiography is considered to be a desirable means of spot checking welder performance, particularly in field welding where conditions such as position, ambient temperatures, and cleanliness are not as readily controlled as in shop welding. It is to be employed whenever an Officer in Charge, Marine Inspection questions a pipe weld not otherwise required to be tested. The standards of acceptance are the same as for 100 percent radiography.

(3) *Ultrasonic*. Where 100 percent ultrasonic testing is specified, the entire surface of the weld being inspected shall be covered using extreme care and careful methods to be sure that a true representation of the actual conditions is obtained. The procedures to be used shall be submitted to the Commandant for approval.

(4) *Liquid penetrant*. Where liquid penetrant examination is required, the entire surface of the weld being examined shall be covered. The examination

shall be performed in accordance with appendix VIII to section VIII of the ASME Code. The following standards of acceptance shall be met:

(i) All linear discontinuities and aligned penetrant indications revealed by the test shall be removed. Aligned penetrant indications are those in which the average of the center-to-center distances between any one indication and the two adjacent indications in any straight line is less than three-sixteenths inch. All other discontinuities revealed on the surface need not be removed unless the discontinuities are also revealed by radiography, in which case the pertinent radiographic specification shall apply.

(5) *Magnetic particle*. Where magnetic particle testing is required, the entire surface of the weld being examined shall be covered. The testing shall be performed in accordance with appendix VI to section VIII of the ASME Code. The following standards of acceptance are required for welds. All linear discontinuities and aligned indications revealed by the test shall be removed. Aligned indications are those in which the average of the center-to-center distances between any one indication and the two adjacent indications in any straight line is less than three-sixteenths inch. All other revealed discontinuities need not be removed unless the discontinuities are also revealed by radiography, in which case the requirements of paragraph (c)(1) of this section shall be met.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 72-206R, 38 FR 17229, June 29, 1973; CGD 78-108, 43 FR 46546, Oct. 10, 1978; CGD 77-140, 54 FR 40615, Oct. 2, 1989; CGD 95-028, 62 FR 51202, Sept. 30, 1997; USCG-2000-7790, 65 FR 58460, Sept. 29, 2000]

Subpart 56.97—Pressure Tests

§ 56.97-1 General (replaces 137).

(a) *Scope*. The requirements in this subpart apply to pressure tests of piping in lieu of 137 of ANSI-B31.1. Those paragraphs reproduced are so noted.

(b) *Leak tightness*. It is mandatory that the design, fabrication and erection of piping constructed under the regulations in this subchapter demonstrate leak tightness. Except where otherwise permitted in this subpart,

¹ Where for some reason, such as joint configuration, radiography is not applicable, another approved examination may be utilized.